CLAIMS

1. A piezoelectric actuator for an ink jet printhead, comprising:

- a block body of piezoelectric material having a bottom face through which the mechanical energy of the actuator is transferred to a receiving member, said body having an active portion adjacent to the bottom face as well as an inactive portion;
- a layered structure of alternating signal electrodes and common electrodes arranged in the active portion, substantially parallel with the bottom face and separated by layers of the piezoelectric material, wherein each signal electrode is neighbored by at least one common electrode and each common electrode is neighbored by at least one signal electrode;
- a layered structure of alternating auxiliary electrodes and common electrodes arranged in the inactive portion, substantially parallel with the bottom face and separated by layers of the piezoelectric material, wherein each auxiliary electrode is neighbored by at least one common electrode and each common electrode is neighbored by at least one auxiliary electrode;
- at least one signal lead electrode formed on a first side face of said block body of piezoelectric material and interconnecting the signal electrodes;
- a ground lead electrode formed on a second side face opposite to the first side face and interconnecting the common electrodes;
- and an auxiliary lead electrode interconnecting the auxiliary electrodes, wherein the auxiliary lead electrode is formed on a third side face of the block body.

2. The piezoelectric actuator according to claim 1, wherein the active portion is divided into a plurality of fingers arranged in parallel to one another and integrally connected with each other by a bridge-like inactive portion of the block body.

3. A piezoelectric actuator according to claim 1, wherein contact electrodes connected to each of the signal lead electrodes and a contact electrode electrically connected to the ground lead electrode are formed on a top face of the block body opposite to said bottom face.

4. A piezoelectric actuator according to claim 3, wherein at least one additional contact electrode is formed on an edge portion of the top face of the block body and is

electrically connected to the auxiliary lead electrode.

5. The piezoelectric actuator according to claim 4, wherein the contact electrodes are formed on both the top face and the bottom face of the block body.

6. The piezoelectric actuator according to claim 1, wherein the block body comprises a second inactive part adjacent to a portion of the bottom face.

7. The piezoelectric actuator according to claim 6, wherein the auxiliary electrodes extend over both inactive portions of the block body, and dummy electrodes are provided in the second active portion, each dummy electrode being arranged in the same plane as a corresponding one of the common electrodes and being electrically connected to the auxiliary lead electrode.

8. An ink jet printhead comprising at least one ink channel terminating in a nozzle and covered by a flexible receiving member, and a piezoelectric actuator as defined in claim 1, bonded to said receiving member.

9. The ink jet printhead according to claim 8, wherein a connecting piece electrically connects the signal electrodes and common electrodes of the actuator and is disposed on a top face of the block body opposite to the bottom face thereof.

10. The ink jet printhead according to claim 9, wherein the length of the actuator in the longitudinal direction of the ink channels is equal to or smaller than the length of the ink channels.